Facilitating Financial Literacy via Virtual Technologies - A Systematic Literature Review

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Abstract— Globally, technology is being used more and more for all kinds of social and commercial objectives. Research indicates that technology has enhanced the enjoyment and intrigue of the teaching and learning process for both teachers and students. This has played a significant role in the dissemination of knowledge and education using technology. International researchers have examined the topic of financial literacy instruction in an offline setting in great detail. Studies about how technology can be used to teach financial literacy are scarce, nevertheless. This essay aims to methodically examine, assess, and investigate the body of knowledge regarding online financial literacy. It describes the functions performed and effects produced by digital platforms in transferring financial literacy via technology. 159 publications on online financial literacy that were taken from the Scopus database underwent a thorough assessment of the literature, and content analysis was then carried out on them. Through this approach, the researchers have safely established that the use of digital literacy in conjunction with online tools to teach financial literacy has led to an increase in the targeted usage and subscription of financial services by consumers worldwide.

Index Terms- Technology, online financial literacy, Financial literacy, Financial education, Systematic literature review

I. INTRODUCTION

Technology is an essential component of human life on a daily basis. As a customer, you utilize computers and smartphones to finish transactions while obtaining goods or services or meeting any essential needs. These transactions can involve purchasing goods or using any kind of service. Furthermore, all major organizations use business intelligence-driven advanced technologies in their marketing, logistics, banking, and finance operations, as well as in commerce and trade to gain a competitive edge and improve their bottom lines. This goes beyond the everyday lives of average consumers. As a result, in this digital age, businesses use a variety of technologies to facilitate interactions with all their stakeholders, including customers.

However, due to limited access to technology or low levels of digital literacy, not all users would be able to fully utilize and take advantage of a given technology's capabilities and usefulness. The capacity to handle and manage money wisely is known as financial literacy (Rugimbana & Oseifuah, 2010). However, prior research indicates that inadequate retirement planning results from lower levels of financial literacy (Lusardi, 2008, 2009 & 2011).

However, it has also been noted that those who are financially literate are more likely to have better asset accumulation (Bottazzi, R., et al., 2011; Stango and Zinman, 2009), show retirement confidence (Lusardi and Mitchelli, 2007; Lusardi, 2010; Van Rooij et al., 2011), participate in the stock market (Yoong, 2010; Van Rooij et al., 2007), and make fewer phone calls to customer service representatives than those who lack financial literacy (Nejad, & Javid, 2018). A greater degree of financial literacy is required for this.

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The current paper provides a comprehensive overview of previous research on how technology might help with financial education. The study will contribute to the development of a comprehensive framework that will demonstrate the state of financial literacy that is currently provided via electronic platforms.

Leveraging virtual technologies to facilitate financial literacy is an ingenious approach, especially considering the growing digital landscape and the need for accessible education. Here's how virtual technologies can be utilized:

1. Online Courses and Webinars: Develop interactive online courses and webinars that cover various aspects of financial literacy, such as budgeting, saving, investing, and understanding credit. These courses can incorporate multimedia elements, quizzes, and simulations to engage learners effectively.

2. Virtual Reality (VR) Simulations: Create VR simulations that allow users to experience real-life financial scenarios in a controlled environment. For instance, users can practice making investment decisions, managing a budget, or navigating financial emergencies within a virtual setting, helping them develop practical financial skills.

3. Mobile Apps and Gamification: Develop mobile apps that gamify financial education, making learning enjoyable and accessible. These apps can include features like budgeting challenges, investment simulations, and progress tracking to encourage users to actively participate in their financial education.

4. Virtual Financial Advisors: Implement AI-driven virtual financial advisors that provide personalized guidance and recommendations based on users' financial goals, risk tolerance, and financial situation. These virtual advisors can offer insights on budgeting, saving strategies, investment opportunities, and debt management, empowering users to make informed financial decisions.

5. Social VR Platforms: Utilize social VR platforms to host virtual financial literacy workshops, networking events, and support groups. These platforms enable users to interact with peers, share experiences, and learn from experts in an immersive virtual environment, fostering collaboration and community engagement.

6. Augmented Reality (AR) Financial Tools: Develop AR applications that overlay financial information onto real-world objects, making financial concepts more tangible and easier to understand. For example, users can use AR to visualize their budgeting goals or explore investment opportunities by scanning real-life objects.

7. Online Financial Simulations: Offer online financial simulations where users can practice managing financial scenarios in a risk-free environment. These simulations can cover topics such as stock trading, retirement planning, and entrepreneurship, allowing users to gain hands-on experience without real-life consequences.

By integrating virtual technologies into financial literacy initiatives, organizations can reach a wider audience, provide engaging learning experiences, and empower individuals to make informed financial decisions for their future.

II. SIGNIFICANCE OF THE STUDY

Facilitating financial literacy through virtual technologies holds significant advantages and impacts, including Virtual technologies break down barriers to access financial education by reaching individuals regardless of geographical location or physical limitations. Anyone with an internet connection can participate, making financial literacy more inclusive and equitable. Virtual platforms enable users to learn at their own pace and convenience, fitting into busy schedules and allowing for on-demand access to educational resources. This flexibility encourages greater engagement and retention of financial knowledge. Virtual technologies offer interactive and immersive learning experiences through multimedia content, simulations, and gamification. These engaging methods enhance user motivation and participation, leading to a deeper understanding and application of financial concepts. Virtual financial education programs often require fewer resources compared to traditional in-person workshops or seminars. This cost-effectiveness allows organizations to reach a larger audience with limited budgets, maximizing the impact of financial literacy initiatives. Virtual platforms can accommodate a large number of users simultaneously, making it easier to scale financial education programs to meet growing demand. Whether serving hundreds or thousands of participants, virtual technologies can efficiently deliver consistent and high-quality learning experiences. Virtual technologies enable the customization of learning experiences based on individual preferences, knowledge levels, and learning styles. Through adaptive algorithms and AI-driven

recommendations, users receive tailored guidance and support that address their specific financial needs and goals. Virtual platforms collect valuable data on user engagement, progress, and learning outcomes. Analyzing this data provides insights into the effectiveness of financial literacy programs, allowing organizers to optimize content, delivery methods, and resource allocation for better results. Virtual financial literacy initiatives foster online communities where participants can connect, share experiences, and support each other in their financial journeys. These communities promote collaboration, peer learning, and accountability, enhancing the overall learning experience. By leveraging virtual technologies for financial education, individuals develop essential digital literacy skills necessary for navigating the increasingly digitalized financial landscape. They become adept at using online tools, managing digital transactions, and protecting themselves from online risks. Overall, facilitating financial literacy via virtual technologies represents a forward-thinking approach to empowering individuals with the knowledge and skills needed to achieve financial well-being in today's digital world.

III. OBJECTIVES AND METHODOLOGY

This study aims to methodically examine, investigate, and compile the corpus of research material that has been written about the topic of technology's involvement in fostering financial literacy, either qualitatively or quantitatively. Some of the procedures that have been described in other research studies for performing a systematic literature review have been implemented (Okoli & Schabram, 2010; Parris & Peachey, 2013). This study was guided by the following research questions:

(a) What goals did the technology-based financial literacy campaign seek to achieve?
(b) Which methodology was used?
(c) How did utilizing these technologies turn out?

Database search
Using the Scopus database, which is connected to the writers' university library system, a document search pertaining to online financial literacy was conducted in order to investigate the study questions. The largest database, Scopus, is multidisciplinary in character,

hence it was chosen to extract the papers from it. Only research articles written in English were eligible for consideration.

Inclusion and Exclusion Criteria
The term "Online financial literacy" was used in the first search, with no restrictions on the year of publication. It was noted how many articles had the aforementioned keywords. We then determined which papers on the subject were relevant and unrelated. The following were the inclusion criteria for the articles:
(a) It ought to be included in peer-reviewed publications, press releases, and review papers (under source and document type).
(b) Not fall under the purview of conference papers, reviews, books, book chapters, or editorial
(c) The article's central focus is online financial literacy, which
(d) looks at how online or digital platforms can be used to teach financial literacy. Articles were disqualified if the abstract of the work did not cover any of the aforementioned topics, including the goals, methods, findings, and discussion sections. A grand number of 159 documents were successfully retrieved. The inclusion criteria mentioned above served as the basis for a thorough screening of every article. After all requirements for inclusion and exclusion were met, 120 articles from various peer-reviewed journals were chosen for the investigation.

IV. DISCUSSION

These days, financial planning is a crucial component for people. In addition to ensuring a successful retirement, money growth is also crucial. Early saving and investing are required for this. Prior research has demonstrated that financial literacy levels, in addition to specific demographic and behavioral characteristics, have a substantial impact on people's investing decisions (Sahi, 2013; Agarwal, et al., 2015). According to research on the topic, financial literacy has three main components: behavior, attitude, and knowledge (Atkinson and Messy, 2013; Santoso et al. 2016).

The amount of education acquired in schools has an impact on financial literacy levels as well. School-based education plays a significant role in influencing young people's eventual adoption of sound financial

practices (Butters et al., 2012; Opletalová, A. 2015). Youths can benefit greatly from the inculcation of financial literacy by their parents, teachers, and peers at school and at home (Lusardi, 2010; Van Campenhout, 2015). Recently, the use of technology has drawn the attention of scholars from all over the world, becoming a worldwide phenomenon (Buchanan, 2013; Nejad, & Javid, 2018). Financial regulatory entities have historically run financial literacy programs at colleges, universities, and corporate organizations.

However, because of the widespread use of e-commerce, information technology, software, and systems, the method of providing financial literacy instruction has drastically changed, with all financial and investment-related information now accessible with just a click. Some nations also employ digital channels, such as social networking sites, to encourage financial education. Digital literacy and financial literacy work together to promote technology adoption, which increases accurate and widespread use of financial services, including banking and insurance (Karlan et al., 2016).

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

Online financial literacy requires a person to be digitally literate in addition to having prior knowledge and expertise in the field. It has been noted that the digital platforms and systems that are accessible through electronic devices, such as computers, desktops, laptops, cellphones, etc., have greatly enhanced users' experiences learning about finance. Moreover, it has simplified and elevated the learning process for educators and students worldwide. Companies, financial institutions, and regulatory agencies are increasingly embracing different digital platforms to improve financial literacy and engage clients through tailored financial product offerings as a result of the widespread use of technology. Through the constant promotion of financial literacy through e-content such as blogs, podcasts, and financial news, as well as advertisements on social media platforms, the topic of financial literacy has become more fascinating and explorable. The majority of research on financial literacy comes from established economies, and as smartphones and other electronic devices become more commonplace, individuals in emerging economies are beginning to rely too heavily on technology for information. Moreover, additional web 4.0-based emerging technologies exist that can improve financial literacy.

One might take into consideration how A.I. tools, such as chatbots, gamification, and fintech, help improve financial literacy. Investigating how these technologies could advance financial literacy and spur the expansion of the financial services sector would be fascinating.

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